Roland®

M-16E

Owner's Manual

16 CHANNEL MIXER

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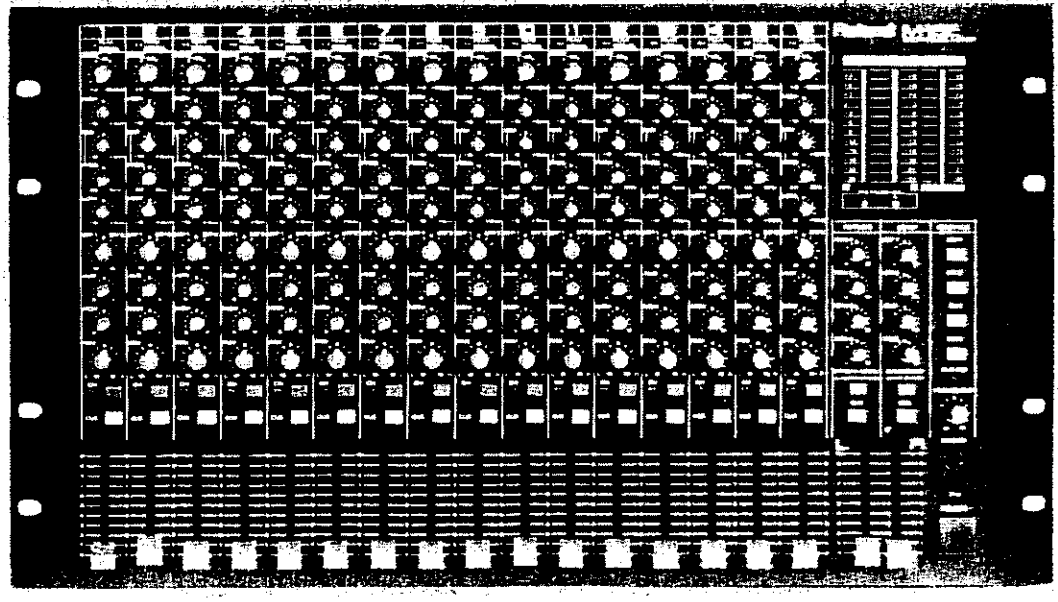

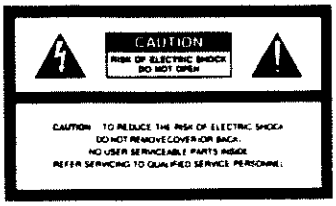
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING When using electric products, basic precautions should always be followed, including the following;

1. Read all the instructions before using the product.
2. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacture.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
   Do not operate for a long period of time at a high volume level or at level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should avoid using in where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    - A: The power-supply cord or the plug has been damaged; or
    - B: Objects have fallen, or liquid has been spilled into the product; or
    - C: The product has been exposed to rain; or
    - D: The product does not appear to operate normally or exhibits a marked change in performance: or
    - E: The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.
"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

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Thank you for purchasing the Roland M-16E.
Please read this owner's manual carefully.

OUTLINE

The Roland M-16E is a rack-mount type, 16 channel mixer that is provided with excellent features which are nearly equivalent to professional equipment.

FEATURES

- The M-16E mixer features high quality sounds.
- The Channel Inputs cover a wide range level from MIC input level(−50dBm) to line level(+4dBm) and can be used for both balance and unbalance signals. Channels 1 to 8 and Master Out are XLR(balance) type connectors.
- Phantom Switch is provided for each channel for use of the condenser microphone which requires external power supply.
- 16 channels are placed in a compact body (6U rack-mount type) allowing you to use it in a small space.
- Each channel contains three band Equalizers (MID band frequency adjustable), Channel Insert Socket, Channel On Switch and Cue Switch.
- Bus In Sockets are provided to stack the mixers for extending the channels.
- Five Sends and four Stereo Returns are provided for use of more than one effect or fold back, etc.
- Newly designed smooth Fader, easy to see Level Meter and Peak/Signal Indicator are also featured.

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IMPORTANT NOTES

◇Power Supply◇

●The appropriate power supply for this unit is shown on its name plate. Please make sure that the line voltage in your country meets the requirement.

●Do not use the same socket used for any noise generating device (such as a motor or variable lighting system.)

●Make sure that the unit is turned off before connecting the power plug to the AC socket.

●Be sure to connect the power cord to the AC socket on this unit before connecting the power plug to the wall socket.

●When disconnecting the power plug from the socket, do not pull the cord but hold the plug to avoid damaging the cord.

●Avoid damaging the power cord.

●If the unit is not to be used for a long period of time, unplug the cord from the socket.

●It is normal for this unit to become hot while being operated.

●Check with your local Roland dealer, if you wish to use this unit in another country.

●Disconnect the AC cord immediately in the event of an electrical storm.

●Pin connection of the XLR type connector is standardized to the 1st pin-Ground, the 2nd pin-Cold and the 3rd pin-Hot of this unit.

◇Location◇

●Be sure to turn on the mixer before turning on the amplifier. Likewise turn the amplifire off first, then the mixer. Before taking procedures, set the faders of the mixer to the "0" positions.

●Avoid using this device in excessive heat or humidity conditions, or where it may be affected by direct sunlight or dust and avoid places subject to high vibration.

●Operating the unit near a neon light, fluorescent lamp, TV or CRT Display, may cause noise interference. If so, change the angle or the position of the unit.

●If a device with a large-sized transformer, such as a power amplifier, is mounted just above this device, hum may be produced.

●Do not place or drop anything heavy on the main unit or its power cord.

◇Cleaning Care◇

●For cleaning the unit, use a dry and soft cloth.

●If the casing is stained, use a cloth slightly dampened with water.

●To remove stubborn stains, clean the casing with a cloth moistened with a nutral detergent, then wipe it dry with a soft cloth.

●Do not use solvents such as paint thinner when cleaning.

◇Others◇

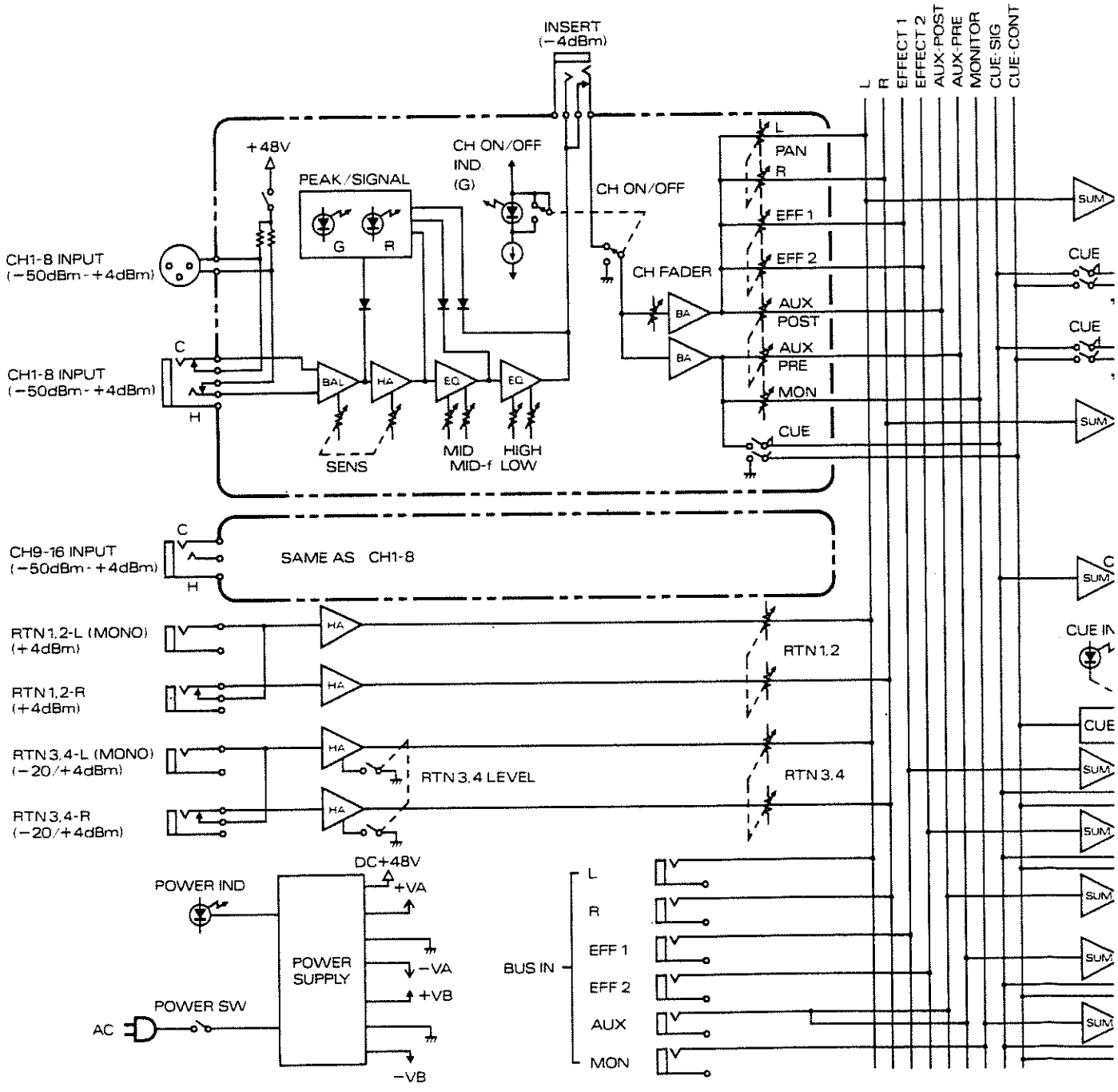
●For approximately 3 seconds after the unit is turned on, the muting circuit functions, therefore no sound is heard.

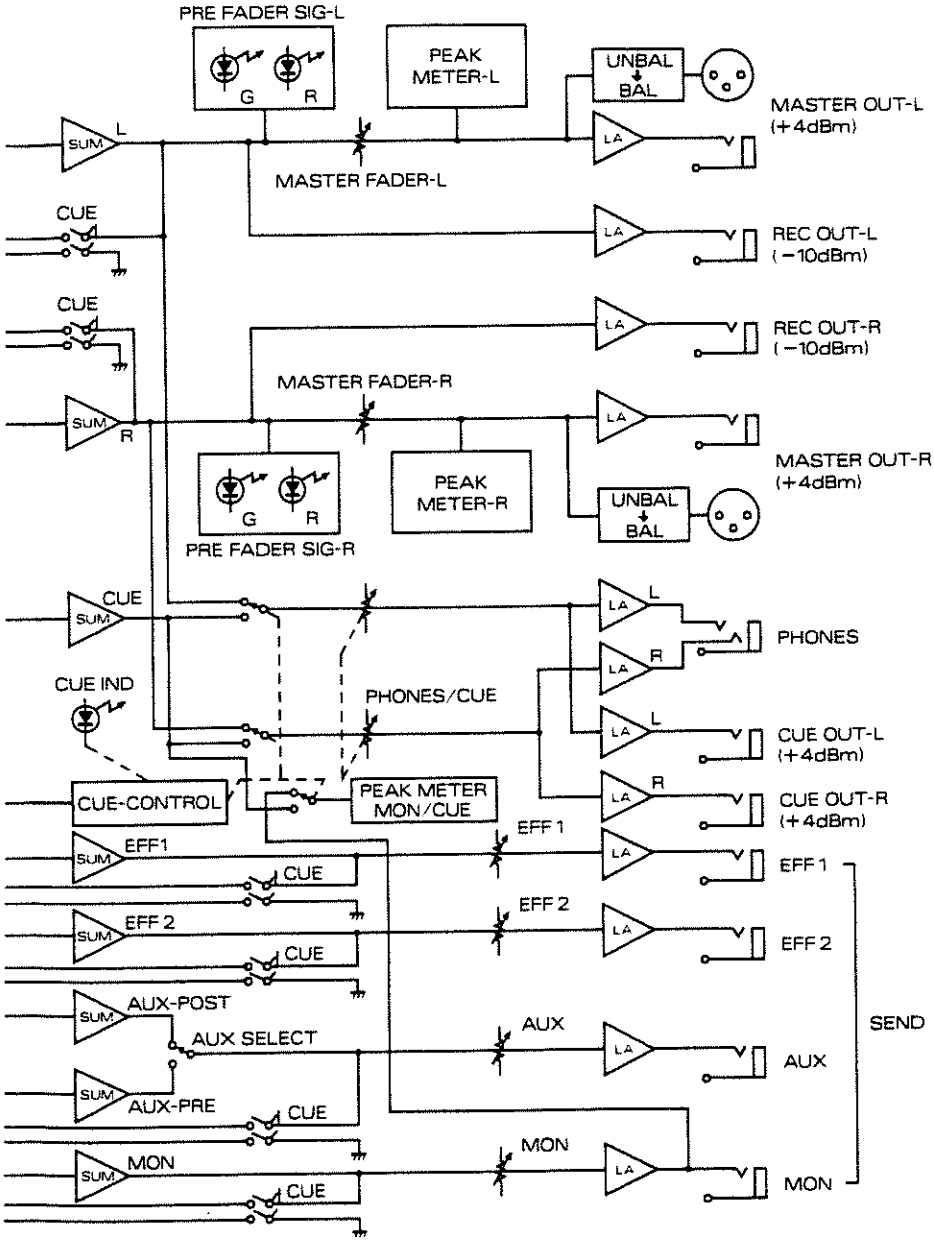
●When switching on/off during performance, a click noise will be produced. There is no need to be concerned.

●Be sure to read page 12 carefully before you have the Phantom Switch's Cover off.

●Be sure to set the Phantom Switches to the OFF positions except when using a condenser microphone which requires external power supply.

1 BLOCK DIAGRAM AND SIGNAL FLOW CHART




PRE FADER SIG-L
G
R
PEAK METER-L
UNBAL
BAL
MASTER OUT-L
(+4dBm)
SUM
L
LA
MASTER FADER-L
CUE
REC OUT-L
(−10dBm)
CUE
REC OUT-R
(−10dBm)
MASTER FADER-R
SUM
R
MASTER OUT-R
(+4dBm)
PEAK METER-R
UNBAL
BAL
PRE FADER SIG-R
CUE
SUM
PHONES
CUE IND
PHONES/CUE
CUE OUT-L
(+4dBm)
CUE-CONTROL
PEAK METER MON/CUE
CUE OUT-R
(+4dBm)
EFF1
EFF 1
EFF 2
AUX-POST
AUX SELECT
AUX
SEND
AUX-PRE
MON

1. Channel Section

The signal fed through an input socket goes to a balance amplifier, then to a head amplifier, and finally, its input sensitivity is adjusted at the Sens Control Knob. When signal is input, the Peak/Signal Indicator lights in green. If the level of the input signal is too high, the indicator changes to red.
The signal which is level-adjusted at the head amplifier is tone-controlled at the Equalizer section (HI, MID, LO), processed at the Channel Insert, then sent to the Channel Fader. After the Channel Fader, the signal is divided into L and R at the Panpot, then sent to the Master Section. A part of the signal is sent to the Effect Volume, AUX Volume, and Monitor Volume before or after the Channel Fader, then sent to the Master Section.

2. Master Section

a. Return

The signals fed into Returns 1 – 4 enter the buffer amplifier, and after passing through Return Volume and being mixed, are passed to the Master Out.

b. Rec Out

Signals coming from the channels are mixed then sent to the Rec Out before going to the Master Fader.

c. Master Out

Signals coming from the channels are mixed and level-adjusted at the Master Fader, then sent to the Master Out.

d. Effect Send

Signals coming from the Effect Volumes are mixed, and level-adjusted at the Effect Send Volume, then sent to the Effect Send.

e. AUX Send

Signal sent to the AUX Volume before or after(pre/post) the Channel Fader is level-adjusted, mixed and further level-adjusted at the AUX Send Volume, then finally sent to the AUX Send.

f. Monitor Send

Signal sent to the Monitor Volume prior to the Channel Fader is level-adjusted, mixed, further level-adjusted at the Monitor Send Volume, then sent to the Monitor Send.

g. Cue Send

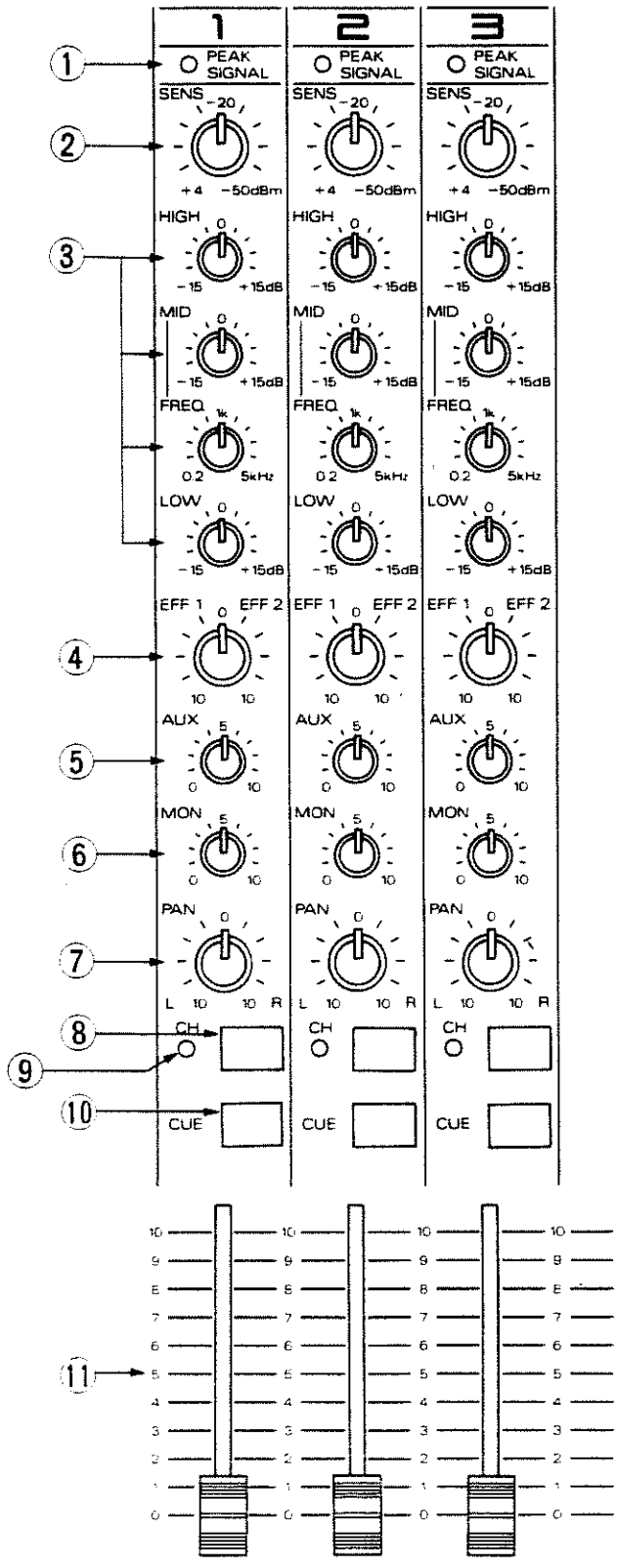
The signal sent from the Cue Switch is mixed, level-adjusted at the Headphone/Cue Volume then sent to the Headphone Socket and Cue Send.

h. Bus In

The signal coming from the Bus In Socket is directly sent to the mixing circuits of the Effect Send, AUX Send and Monitor Send to be mixed, then sent to the Effect Send Volume, AUX Send Volume and Monitor Send Volume to be finally output from the respective Send Outs.
The signals coming from the Bus In Sockets(L and R) are directly sent to the mixing circuits to be mixed, sent to the Master Fader, then finally to the Master Out.

2 PANEL DESCRIPTION

1. Channel Section



❶Peak/Signal Indicator

This indicator lights in green when any signal is fed into the Input Socket, and changes to red if the level of the signal is too high.

It lights in green at −16dB which is the rated level and lights in red at −6dB which is a clipping level.

*The Peak/Signal Indicator also supervises the level of the signal after it passes the Equalizer section.

❷Sens Control Knob

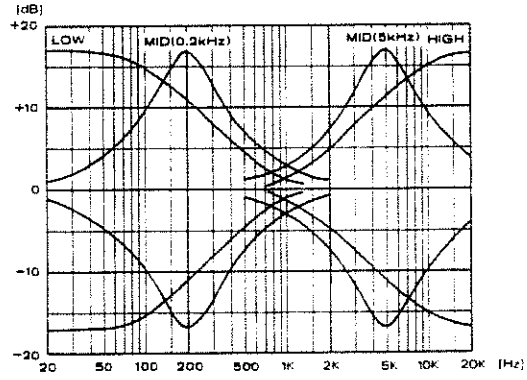
This adjusts the input sensitivity depending on the level of the input signal. Adjust this knob so that the Peak/Signal Indicator normally lights in green and occasionally in red. If the Peak/Signal Indicator does not light up at all, rotate the Sens Control Knob clockwise(to boost the input sensitivity) or increase the input level.

*The Rated Input varies from −50dBm to +4dBm.

❸Equalizer Control Knobs

These control knobs adjust the tone of the input sound.

- ●High : This controls the higher range sounds : 10kHz frequency can be controlled up to ±15dB.
- ●Mid : This controls the middle range sounds : 200Hz to 5kHz frequency can be controlled up to ±15dB.
- ●Mid Frequency : The frequency of the Mid Equalizer can be varied from 200Hz to 5kHz.
- ●Low : This controls the lower range sound : 100Hz frequency can be controlled up to ±15dB.



❹Effect Volume

This adjusts the level of the signal to be sent to the Effect Send. At the center position, the output level is zero for both EFF 1 and EFF 2. Rotating the knob counterclockwise adjusts EFF 1's level, while rotating it clockwise adjusts EFF 2's level.

*The signal is sent to the Effect Send post fader (after the Channel Fader).

❺AUX Volume

This adjusts the level of the signal sent to the AUX Send.

*The AUX Select Switch (located at the Master section) can select whether to send the signal to the AUX Send before (PRE) or after (POST) the Channel Fader.

❻Monitor Volume

This adjusts the level of the signal to be sent to the Monitor Send.

*The signal is sent to the Monitor Volume pre fader (before the Channel Fader).

❼Panpot

This sets the position of sound imaging in stereo field. At the center position, the volume of the L and R are equal.

❽Channel On Switch

Pressing this switch down(Channel On) will send signal to the Master Section.

*Where the signal is turned on or off is pre fader.

*When the Channel On Switch is set to off, no signal is sent out.

❾Channel On Indicator

This lights in green when the Channel On Switch is pressed down(Channel On).

❿Channel Cue Switch

This switch sends signals to the Headphones or Cue Out.

*The signal is passed from the pre fader stage.

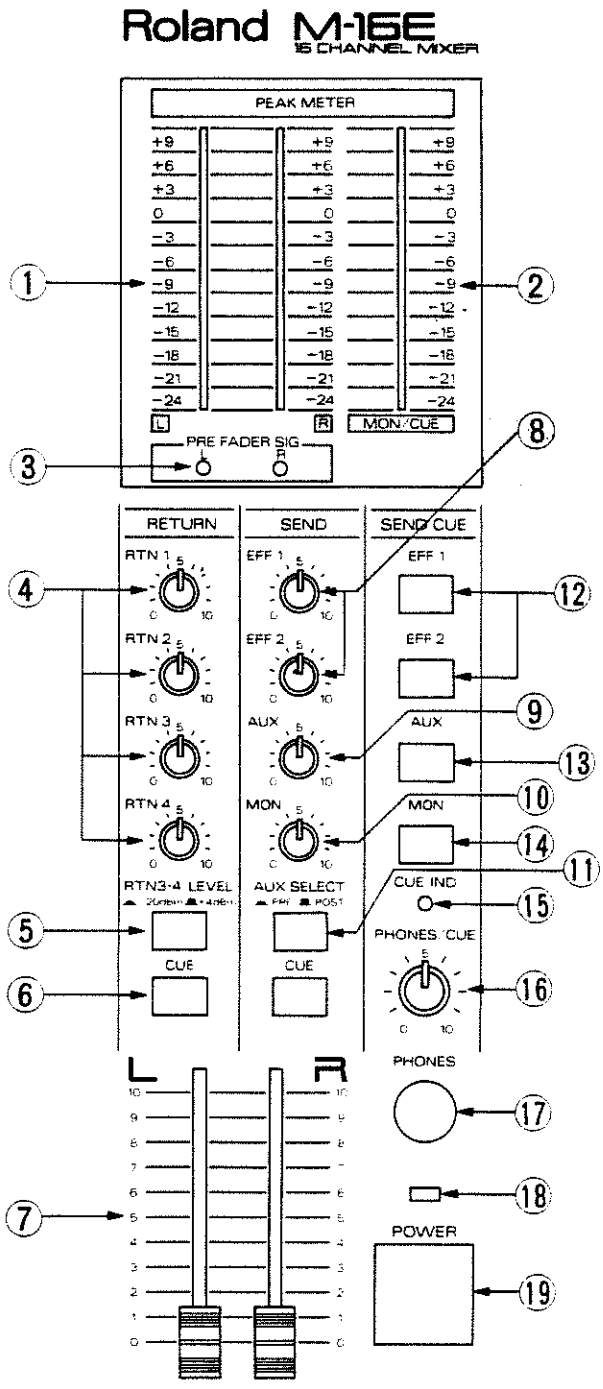
*Then the Channel Cue Switch is set to off, no signal is sent out.

⓫Channel Fader

This adjusts the level of the signal sent from the channel.

*In the Channel Faders, "10" is the rated output.

2. Master Section



❶Master Peak Meter

This supervises the level of the signal output from the Master Out. When "0dB" is lit, +4dBm level is output from the Master Out.

❷Monitor/Cue Peak Meter

This supervises the level of the signals output from the Monitor Send and Cue Send. Usually, the output level of the Monitor Send is indicated, while the output level of the Cue Send is shown when the Cue Switch is pressed down.
When "0dB" is lit, +4dBm level is output from the Monitor Send or Cue Send.

*Where the monitor signal is checked is after the Monitor Send Volume.

*Where the cue signal is checked is before the Headphone/Cue Volume.

❸Pre Fader Signal Indicators

These supervise the output level of the signal sent from the amplifier where the signals(L and R) from each channel are mixed. The signal is checked before the Master Fader. At the rated level −20dB, it lights in green and at the clipping level −6dB, lights in red.

❹Return Volume Controls

These adjust the level of the signal fed into the Return Sockets.

❺RTN3-4 Level Switch

This selects the input level of Returns 3 and 4.

*Select either +4dBm or −20dBm depending on the connected device.

❻Master Cue Switch

This switch sends the signals to the Headphones or Cue Out.

*The signal is passed from the pre fader stage (before the Master Fader).

❼Master Faders

These adjust the final output level of the mixed signal.

*In the Master Faders, "8" is the rated output.

❽Effect Send Volume Controls

These adjust the level of the signal sent to the effect units.

*In the Effect Send Volume Controls, "7" is the rated output.

❾AUX Send Volume Control

This adjusts the final output level of the signal which has been level-adjusted in the AUX Volume in each channel.

*In the AUX Send Volume Control, "7" is the rated output.

❿ Monitor Send Volume Control

This adjusts the final output level of the signal which has been level-adjusted at the Monitor Volume of each channel.

*In the Monitor Send Volume Control, "7" is the rated output.

⓫AUX Select Switch

This selects the position where the signal is sent to the AUX Send. When it is set to "PRE", the signal is sent before the Channel Fader, and therefore can be used for monitoring. When it is set to "POST", the signal is sent after the Channel Fader, and therefore can be used for effect send.

⓬Effect Send Cue Switch

This sends the effect signal to the Headphones or Cue Out.

*The signal is sent to the Headphones or Cue Out before the Effect Send Volume.

⓭AUX Send Cue Switch

This switch sends AUX signal to the Headphones or Cue Out.

*The signal is sent to the Headphones or Cue Out before the AUX Send Volume.

⓮Monitor Send Cue Switch

This switch sends monitor signal to the Headphones or Cue Out.

*The signal is sent to the Headphones or Cue Out before the Monitor Send Volume.

⓯Cue Indicator

This lights in red when more than one Cue Switch is pressed down.

⓰Headphones/Cue Volume Control

This controls the volume of the Headphones or Cue Out.

⓱Headphones Socket

Provides connection for stereo headphones.
Normally, the signal from each Channel Fader is mixed and output, but when the Cue Switch is pressed down, only the cue signal is output.

⓲Power Indicator

This lights up when the unit is switched on.

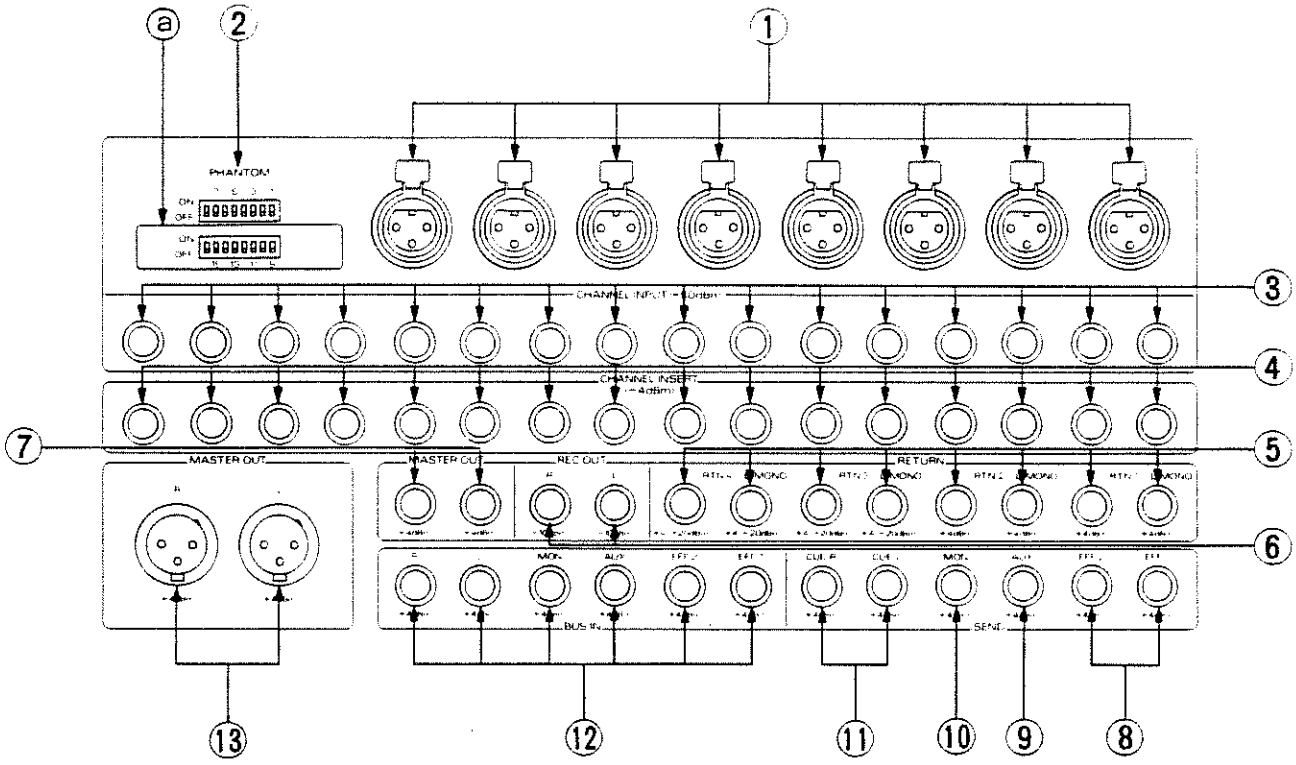
⓳Power Switch

Pressing this switch down will switch on the unit. Pressing the switch again will switch the unit off.

*Before switching on or off the unit, be sure to set the Master Faders to zero.

*For about three seconds after the unit is switched on, the muting circuits function, therefore no sound is output.

3. Rear Panel



❶Input Connectors

These are XLR(balance) type input connectors. Connect microphones, musical instruments, etc. When both Input Socket and Connector are used at the same time for one channel, the Input Socket has priority.

❷Phantom Switches

These are the power supply switches for condenser microphones that require external power supply. When you do not use a condenser microphone, be sure to set the relevant switch to the OFF position.

When these are set to the ON positions, the Input Connector "1"(ground), "2"(cold) and "3"(hot) carry on 48VDC.

When connecting or disconnecting a microphone cable, be sure to set the switch to the OFF position.

*Channels 9 to 16 carry 48VDC on the Input Sockets. If you happen to connect to standard phone sockets by mistake without the Phantom Switch set to OFF, damage may be caused to devices. Be especially careful while you have the "Phantom Switch's Cover" ⓐ off.

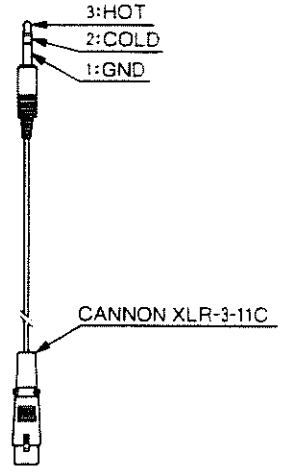
❸Input Sockets

Connect microphones, electronic musical instruments, etc, to these sockets.

Use stereo standard plugs for balance input.

*Use standard phone plugs for unbalanced input.

*When connecting condenser microphones to the Channels 9 to 16 that require phantom power supply, use the input cable (PCS-30). Then remove the Phantom Switch's Cover, and set ON only the switches for the channels that use the phantom power.

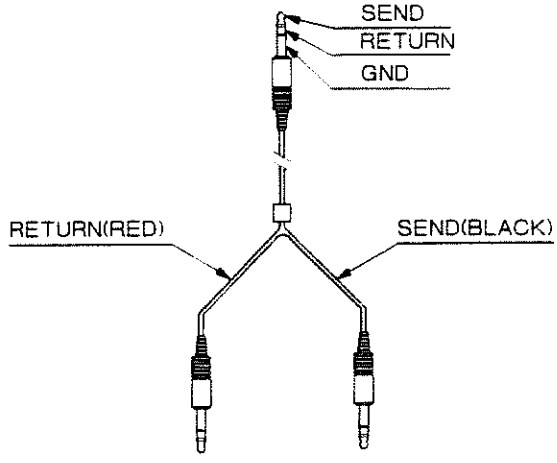


❹Insert Sockets

These are input and output sockets for connecting an effect to each channel. These can also be used for direct output from channels.

*The signal is output after the Equalizer and before the Channel On Switch.

*Use Insert Cable (PCS-31) for connecting an effect unit and a standard phone cable for using as a direct output.



❺Return Sockets

The signal returned from an effect unit is input through a Return Socket. These sockets can also be used for auxiliary inputs. A Return Socket is stereo input, but can be used as a standard phone plug (mono) by using only the L side.

❻Rec Out Sockets

These are output sockets for connecting a tape recorder, etc. The Rec Out Sockets cannot perform monitor playback and recording at the same time.

*When recording onto a tape recorder, oscillation may occur when the playback sound on the tape recorder is returned to the mixer. Set the Input Volume Control where the tape recorder is connected to zero or disconnect it.

*The signal is output before the Master Fader(pre fader).

❼Master Out Sockets

These are output sockets for connecting a power amplifier, etc.

❽Effect Send Sockets

These are for sending signal to an effect unit.

❾AUX Send Socket

This sends signal to an effect unit or monitor.

❿Monitor Send Socket

This sends signal to a monitor.

⓫Cue Send Sockets

Cue signal is sent through these sockets.

*When the Cue Switch is not used, the signal from the Master Out(pre fader) is output.

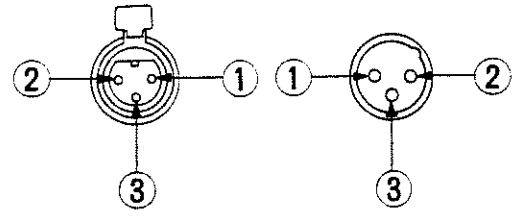
⓬Bus In Sockets

These can be directly connected to the Effect Send, AUX Send, Monitor Send and Master(L and R) busses for mixing. When stacking two mixers, you can extend the input channels by feeding signals to the Bus In Socket on the master mixer from the Send or Master Out on a slave mixer.

⓭Master Out Connectors

These are XLR(balance) type output connectors for connecting a power amplifier, etc.

*There are two types of XLR connectors' pin standards; USA and Europe types.
This unit adopts USA type(1st:GND, 2nd:COLD, 3rd:HOT). When connecting this unit with other devices, make sure the pin standard of the devices match this unit's.



1:GND
2:COLD
3:HOT

3 CONNECTION AND OPERATION

■Initial Procedure

①Make sure that the unit is switched off, then connect the power cord to the socket.

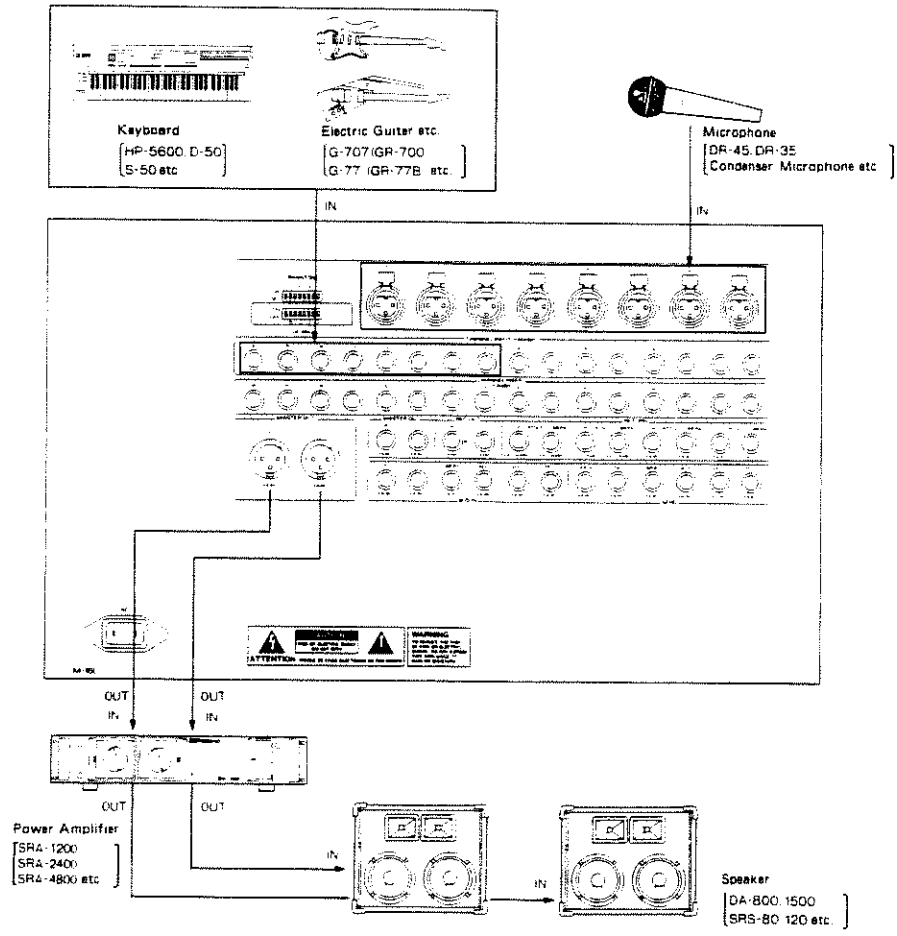
②Connect all the relevant devices.(See the picture shown below.)

③Set all the control knobs and faders to zero.

④Set the Phantom Switches of the channel where condenser microphones are to be connected to the ON positions. Be sure that all the other Phantom Switches are set to the OFF positions.

⑤Make sure that connections are correctly made, switch on the input devices first, the mixer, then finally the power amplifier.(When switching off the units, take the reversed order.)

1. Setup with a Microphone, Electronic Musical Instrument, etc.



■Mixing with a Microphone, Electronic Musical Instrument, etc.

①As you actually listen to the sound, adjust the Sens Control Knob so that the Peak/Signal indicator occasionally lights in red.

②Set the Channel Faders around 7, then adjust the overall volume with the Master Faders.

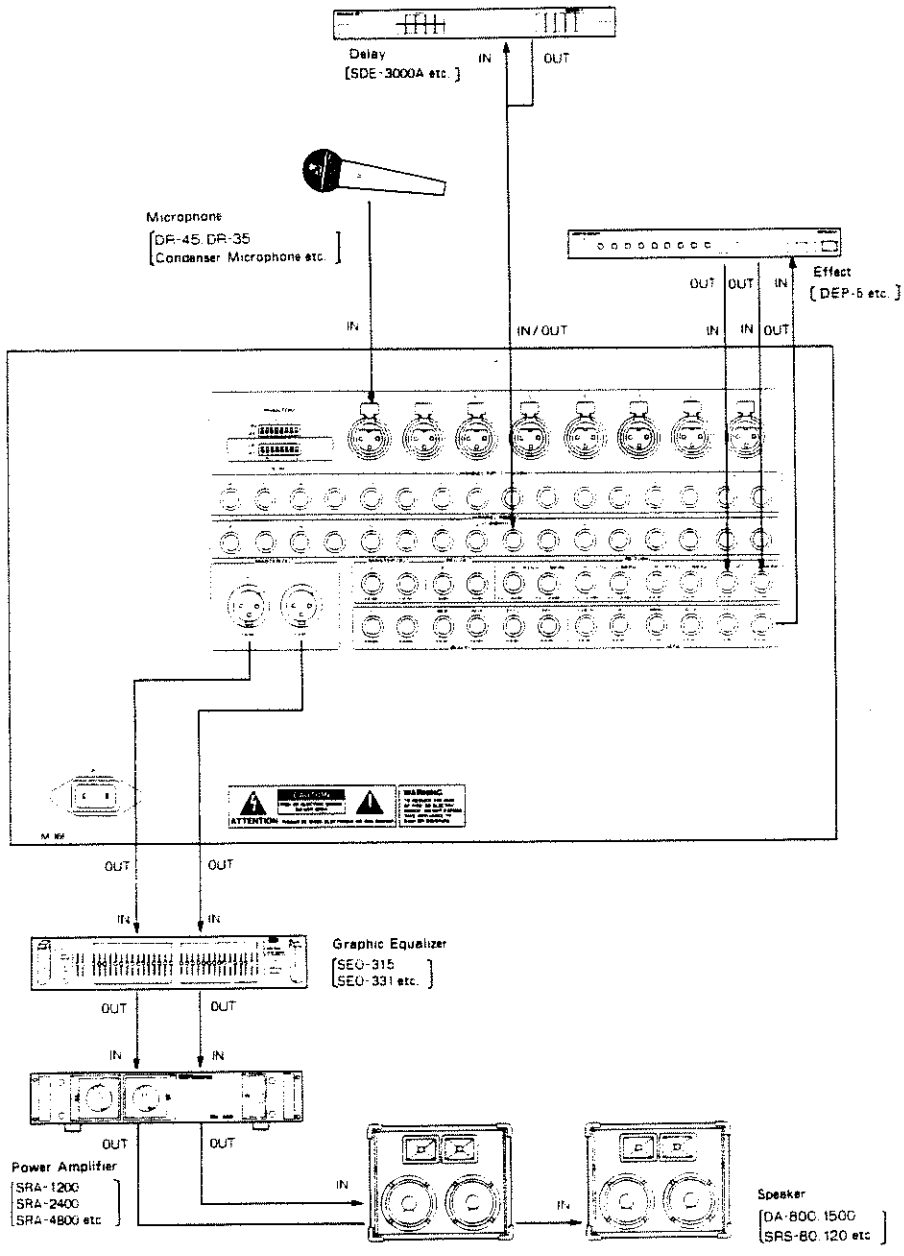
③Control the tone of sound at the Equalizer section.

*If the Peak/Signal Indicator lights in red too frequently, lower the Sens Control Knob.

④Set the sound positioning of the L and R with the Panpot.

⑤Adjust the volume balance of each channel with the Channel Fader.

2. Setup with an Effect Unit, etc.



■Effect Processing with a Delay, Reverb, etc.

①Raise the Effect Volume Control of the channel where you wish to add effect, then adjust the overall output level using the Effect Send Volume Controls in the Master Section with the help of the input level meter on the effect unit.

②Adjust the level of the signal returned from the effect unit using the Return Volume Controls.

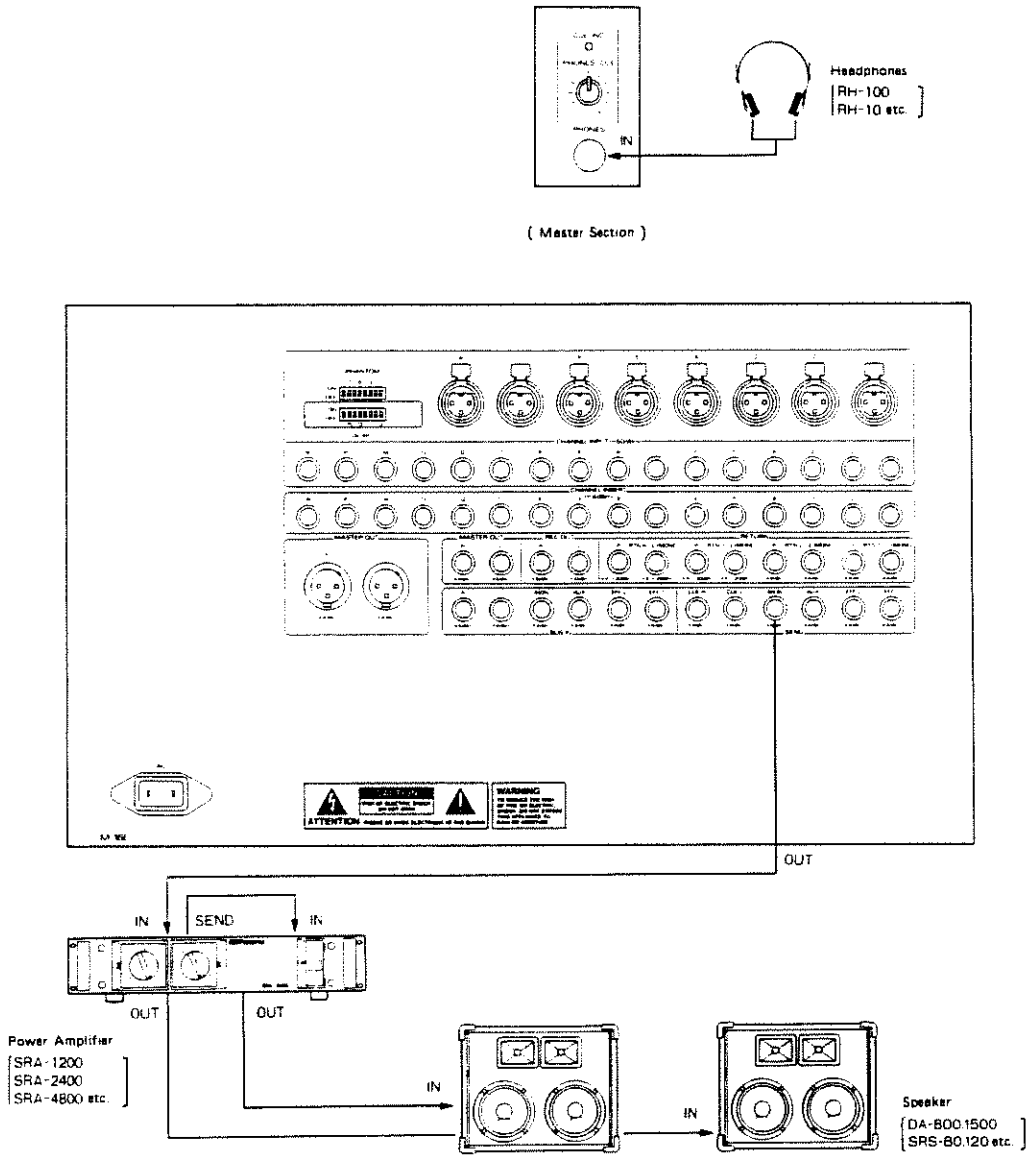
＊Direct sound is processed within the mixer, so return only the effect sound to the mixer.

＊The signal is sent to the Effect Send after the Channel Fader.

Effect signal can be directly sent to the channel and mixed by connecting an effect unit to the Channel Insert.

By inserting a parametric equalizer or graphic equalizer between the mixer and a power amplifier, you can further adjust the sound field or overall tone.

3. Setup with a Monitor and Cue



■How to Monitor or Fold back

①Adjust the output level of the sound to be monitored with the Monitor Volume Control of each channel.

②Adjust the overall volume of the Master section with the Monitor Send Volume Control.

*The mixing balance or volume for monitoring can be set regardless of the position of the Channel or Master Faders.

*The AUX Socket also can be used for monitoring by setting the AUX Select Switch to the PRE position.

■How to Monitor through the Speakers or Headphones with the Cue

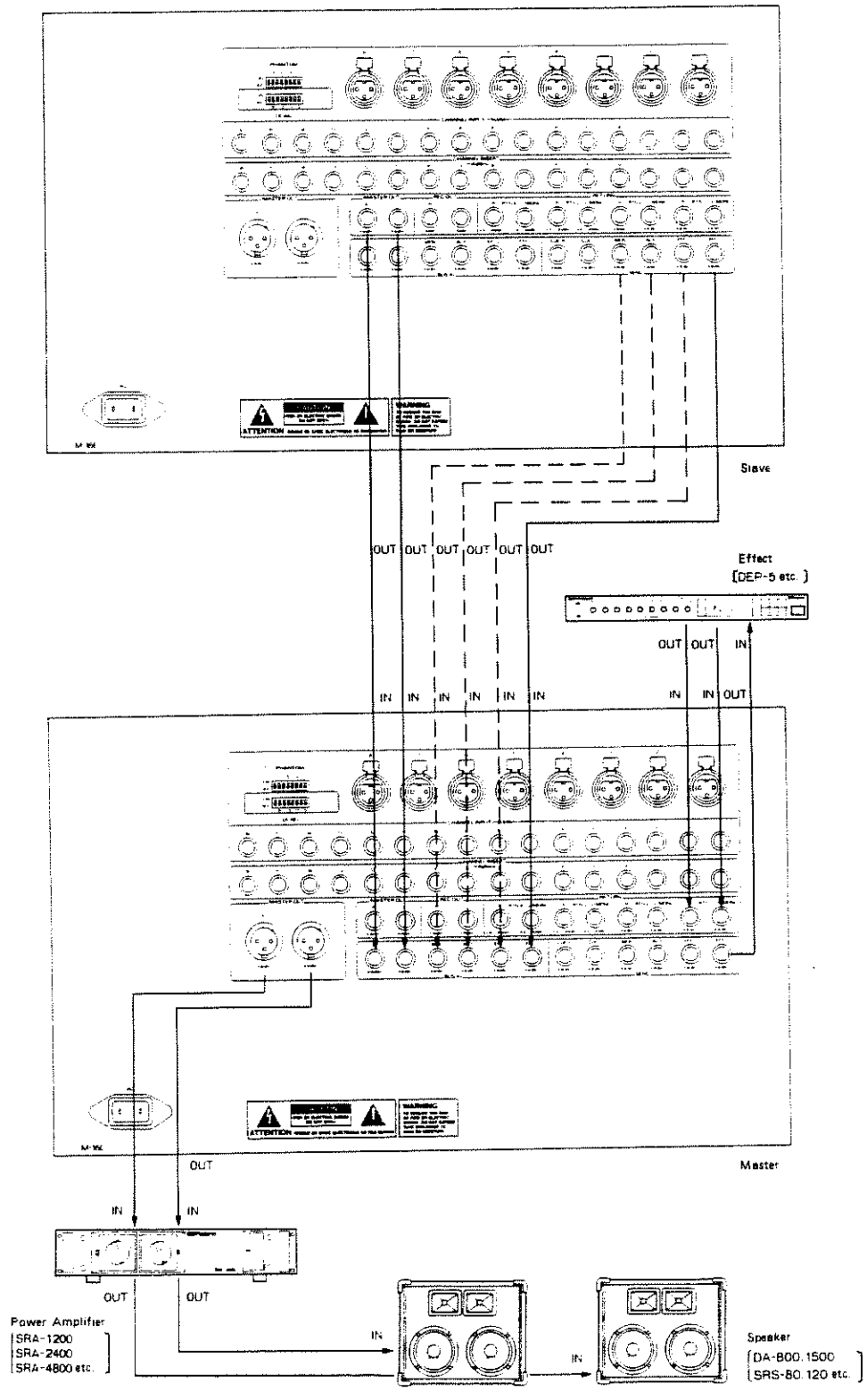
①Press down the Cue Switch which you wish to monitor.

②Adjust the overall output level with the Headphones/Cue Volume Control.

③Cue signal can be monitored through the Headphones or Cue Send Sockets.

*When the Cue Switch is not used, the signal from the Master Out is output.

4. Stacking Examples

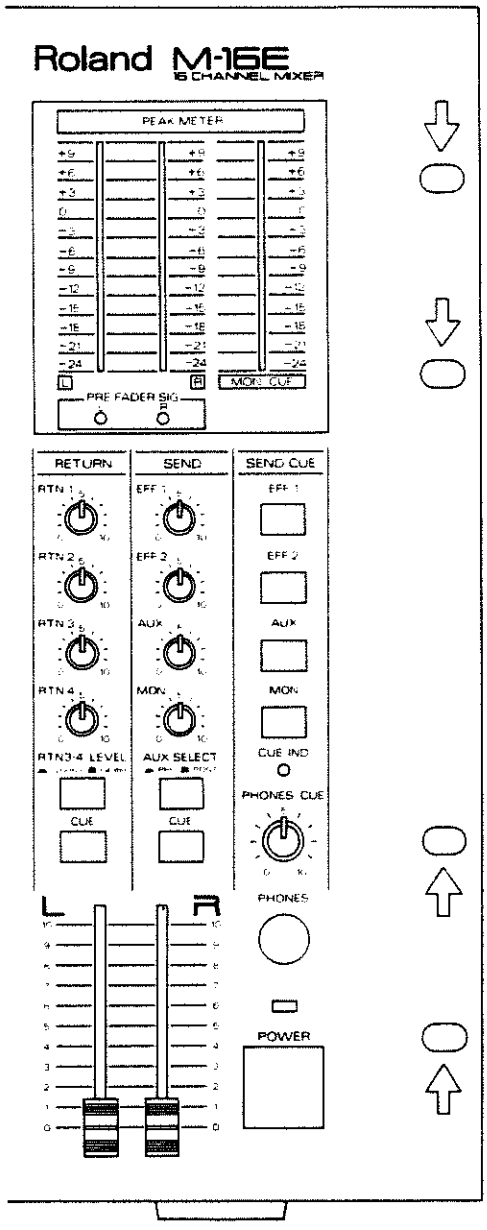


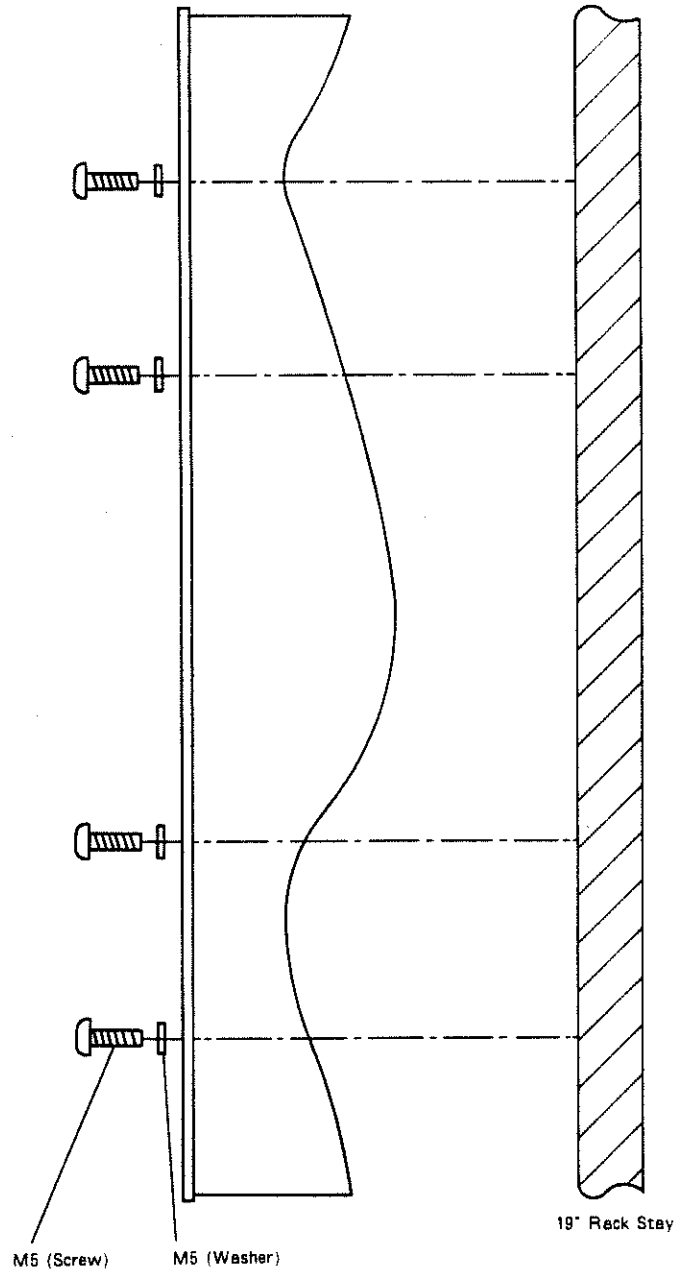
Connecting more than two mixers for extending channels is called stacking.The picture below shows stacking of two M-16E's.
In this way, two mixer's effect processing can be employed while also as well as increasing the number of input channels.

*By connecting the Effect Send or Master Socket on a slave mixer to the Bus In on a master mixer, the output signal from the Effect Send and Master Out on both mixers can be sent out from the Effect Send or Master Out Connector(Sockets) on the master mixer.

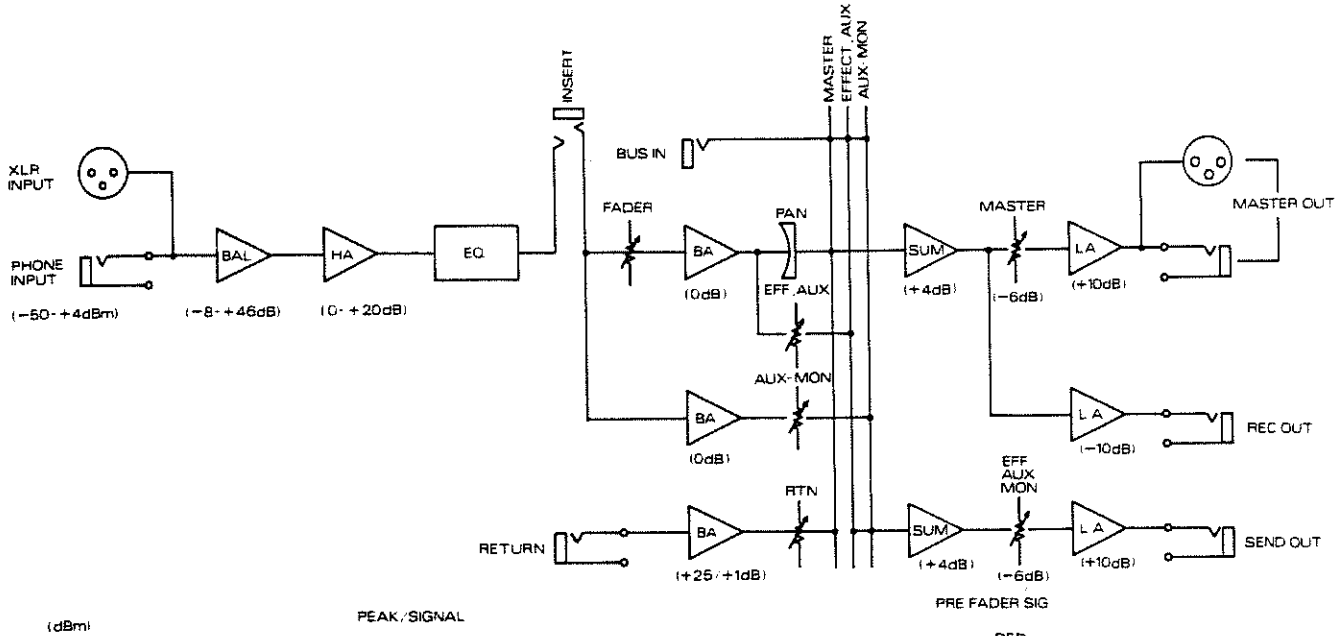
5. Rack-mounting

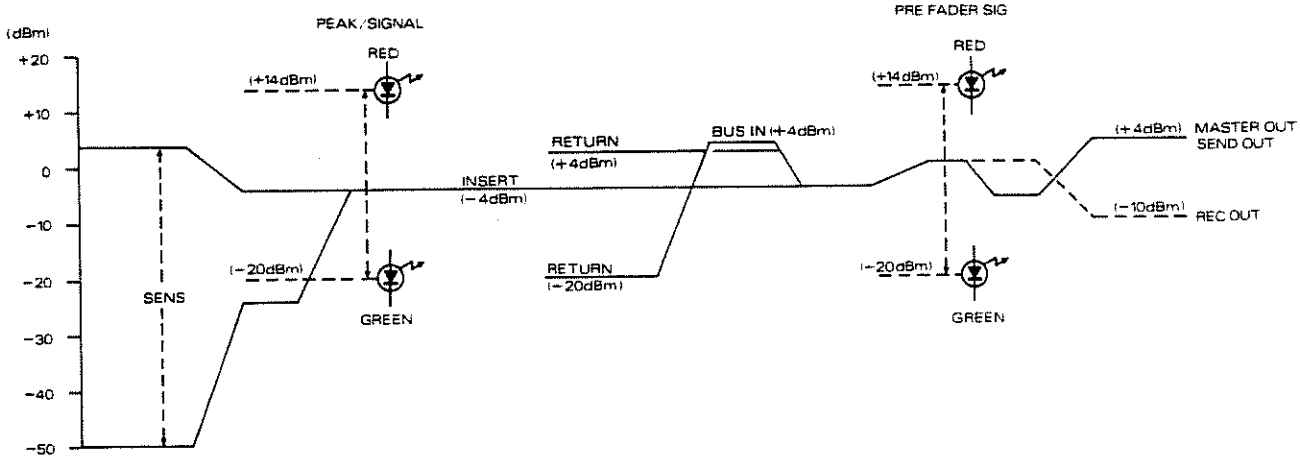
This unit is a 6U size mixer, mountable on a 19" rack. Install the unit as shown below using 5mm screws.





4 LEVEL DIAGRAM





5 INPUT AND OUTPUT STANDARD

■ Input Standard

Input Socket		Input Sensitivity	Rated Input Level	Input Impedance	Recommended Source Impedance	Type of Connectors
CHANNEL INPUT (SENS = MAX)	CH1-8 (XLR-BAL)	-56dBm(1.23mV)	-50dBm(2.45mV)	3k Ω	Less than 600 Ω	XLR-3-31 (XLR Connector)
	CH1-8 (PHONE-BAL)	-56dBm(1.23mV)	-50dBm(2.45mV)	10k Ω	Less than 1k Ω	STEREO PHONE
	CH9-16 (PHONE-BAL)	-56dBm(1.23mV)	-50dBm(2.45mV)	11k Ω	Less than 1k Ω	STEREO PHONE
	CH1-8 (PHONE-UNBAL)	-56dBm(1.23mV)	-50dBm(2.45mV)	6.5k Ω	Less than 1k Ω	STEREO PHONE
	CH9-16 (PHONE-UNBAL)	-56dBm(1.23mV)	-50dBm(2.45mV)	10k Ω	Less than 1k Ω	STEREO PHONE
INSERT (RETURN)	CH1-16	-10dBm(245mV)	-4dBm(489mV)	5k Ω	Less than 1k Ω	STEREO PHONE
RETURN	RTN1,2	-2dBm(615mV)	+4dBm(1.23mV)	18kΩ (STEREO) 9kΩ (MONO)	Less than 2kΩ (STEREO) Less than 1kΩ (MONO)	PHONE
	RTN3,4 (LEVEL=-20dBm)	-26dBm(38.8mV)	-20dBm(77.5mV)	18kΩ (STEREO) 9kΩ (MONO)	Less than 2kΩ (STEREO) Less than 1kΩ (MONO)	PHONE
BUS IN	EFF1,2,AUX, MON,L,R	-2dBm(615mV)	+4dBm(1.23mV)	10k Ω	Less than 1k Ω	PHONE

■ Output Standard

Output Socket		Rated output Sensitivity	Non-Clip Max. Output	Output Impedance	Recommended Load Impedance	Type of Connectors
MASTER OUT	BALANCED	+4dBm *1 (1.23V)	+20dBm *1 (7.75V)	600 Ω	More than 600 Ω	XLR-3-32 (XLR Connector)
	UNBALANCED	+4dBm(1.23V)	+20dBm(7.75V)	300 Ω	More than 3k Ω	PHONE
INSERT (SEND)	CH1-16	-4dBm(0.489V)	+20dBm(7.75V)	100 Ω	More than 3k Ω	STEREO PHONE
SEND	EFF1,2,AUX, MON, CUE	+4dBm(1.23V)	+20dBm(7.75V)	300 Ω	More than 3k Ω	PHONE
REC OUT		-10dBm	+20dBm(7.75V)	300 Ω	More than 3k Ω	PHONE
PHONES		—	90mW+90mW *2	100 Ω	More than 8 Ω	STEREO PHONE

@:0dBm=0.775Vrms

*1:600Ω Loaded

*2:Both Channels 100Ω Loaded

6 SPECIFICATIONS

●Frequency Response

10Hz to 50kHz $^{+1dB}_{-3dB}$ (SENS=MIN.)

●Total Harmonic Distortion

Less than 0.1% (20Hz to 20kHz at rated output)

●Noise Level (Input short, IHF-A, Typ.)

Equivalent Input Noise Level

− 129 dBm

Residual Noise Level

−102 dBm	[All Faders : min]
−80 dBm	[Master Faders : max]
	[All Channel Faders : min]
−77 dBm	[Master Faders : max]
	[All Channel Faders : max]
	[All SENS.'s : min]
−52 dBm	[Master Faders : max]
	[All Channel Faders : max]
	[All SENS.'s : max]

●Cross Talk

Less than −70 dB (1kHz between channels)

Less than −70 dB (1kHz between L and R)

●Equalizer

HIGH-EQ	±15 dB (10 kHz Shelving type)
MID -EQ	±15 dB (0.2 to 5 kHz Peaking type)
LOW -EQ	±15 dB (100 Hz Shelving type)

●Power

117 / 220 / 240V (AC 50 / 60 Hz)

●Consumption

52W (117V)

62W (220/240V)

●Dimensions

482 (W) × 247 (D) × 268 (H) mm

(19") (9" 23/32) (10" 9/16)

●Weight

9.2kg / 20lb 5oz

*Specifications are subject to change without notice.

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A-16E

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